

1. A method of estimating the operating characteristics of a communication unit in a radio network in which a plurality of such communication units can communicate with a plurality of terminals by means of wireless signals and in which the terminals and the communication units are capable of macro-diversity communication whereby a terminal may simultaneously communicate with a plurality of the communication units, the method comprising:

- estimating for the communication unit and neighbouring communication units the propagation characteristics of the wireless signals to and/or from each such communication unit, in a manner specific to that respective communication unit;

- determining based on at least the estimated propagation characteristics and the relative locations of the communication unit and the neighbouring communication units a representation of at least one of the macro-diversity gain for the communication unit and the fading margin for the communication unit.

2. A method as claimed in claim 1, wherein the step of estimating the propagation characteristics is performed by means of ray tracing.

3. A method as claimed in claim 1, wherein the step of determining a representation of at least one of the effective macro-diversity gain for the communication unit and the fading margin for the communication unit comprises:

- estimating a dominance area for the communication unit;

- modelling the delay of signals in the dominance area by means of a delay model;

- estimating the extent of macrodiversity in the dominance area;

determining the said representation based on the said delay model, the estimated extent of macrodiversity and an estimated speed of a terminal relative to the communication units.

4. A method as claimed in claim 3, wherein the dominance area is the area in which it is estimated that the communication unit would provide a stronger signal than the other communication units.

5. A method as claimed in claim 3, wherein the delay model is determined by:

estimating a delay profile for communications from the communication unit to a plurality of locations in the dominance area; and

selecting the delay model from a plurality of predetermined delay models as being the one of those delay models that best represents the delay profiles to the said locations.

6. A method as claimed in claim 5, wherein the wireless signals have a chip rate and the step of estimating the delay profile comprises:

determining for each of the said locations a tapped delay model representative of the respective delay profile and the chip rate; and

the step of selecting the delay model comprises selecting from the predetermined delay models the one of those delay models that best represents the determined tapped delay models.

7. A method as claimed in claim 3, wherein the step of estimating the extent of macrodiversity in the dominance area comprises determining the average number of macrodiversity branches for terminals operating in the dominance area.

8. A method as claimed in claim 1, comprising determining based on the macro-diversity gain for the communication unit and/or the fading margin for

the communication unit a configuration for the network, and operating the network according to that configuration.

9. A method as claimed in claim 8, wherein the said configuration includes one or more of a location for the communication unit and an operational parameter of the communication unit.

10. A method as claimed in claim 9, wherein the operational parameter is a transmission power parameter.

11. A method as claimed in claim 1, wherein the radio network is operable according to a CDMA method.

12. A method as claimed in claim 1, wherein the terminals are radio telephones.